Date: Wed, 30 Mar 94 04:30:16 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #84
To: Ham-Ant

Ham-Ant Digest Wed, 30 Mar 94 Volume 94 : Issue 84

Today's Topics:

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

Date: 29 Mar 94 16:37:27 GMT
From: hp-cv!hp-pcd!hpcvsnz!tomb@hplabs.hp.com
Subject: Building Your Own Antenna?
To: ham-ant@ucsd.edu

Nelson Fernandez Jr (nelsonf@netcom.com) wrote:

: Can someone suggest the best type of antenna for scanning? I have a coilw
: whip on my portable scanner, but I would like a better antenna for when I
: scan at home.

"Best" depends on what you want to do. If you want to receive only things
in a 2MHz band from a town 100 miles away, "best" might well be a
highly directional array up on a tower. If you want to receive everything
from 30MHz to 1GHz in the local area, then a discone is probably a good

choice (perhaps even two of them, one for the upper portion and one for the lower portion of the frequency range). Guessing that the latter is more like what you want to do, you can find plans for discones in some ham pubs. The RSGB VHF manual comes to mind, but surely it's covered in some ARRL pubs too.

Date: 28 Mar 1994 18:29:43 GMT
From: elroy.jpl.nasa.gov!sdd.hp.com!hpscit.sc.hp.com!icon!hpchase.rose.hp.com!cmoore@ames.arpa
Subject: CB Mag mount for 10M mobile?
To: ham-ant@ucsd.edu

I have been thinking about trying out HF mobile operation, and I've been looking for a good way to get started. I have an IC-737, which ought to work pretty well mobile. It occured to me that I should be able to get a CB mag mount antenna and trim it a bit to use it on 10M. I looked at Radio Shack and they have a couple of them, and some even mention being usable for 10M with some trimming. But they also had some power limitations, like 20W max or something. So I guess my questions are, has anyone successfully used one of these for 10M, and also why the power limitation? What component(s) in an antenna would restrict the power?

Chris Moore
N6IYS
cmoore@cancun.rose.hp.com

Date: Mon, 28 Mar 94 21:31:06 PST
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!news.cac.psu.edu!news.pop.psu.edu!ctc.com!news.mic.ucla.edu!unixg.ubc.ca!nntp.cs.ubc.ca!mala.bc.ca!oneb!ham!emd@network.ucsd.edu
Subject: CB Mag mount for 10M mobile?
To: ham-ant@ucsd.edu

cmoore@mothra.rose.hp.com (Chris Moore) writes:

> I have been thinking about trying out HF mobile operation, and I've been
> looking for a good way to get started. I have an IC-737, which ought to
> work pretty well mobile. It occured to me that I should be able to get
> a CB mag mount antenna and trim it a bit to use it on 10M. I looked at
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> like 20W max or something. So I guess my questions are, has anyone
> successfully used one of these for 10M, and also why the power limitation?
> What component(s) in an antenna would restrict the power?

>
> Chris Moore
> N6IYS
> cmoore@cancun.rose.hp.com

Why bother with a CB antenna? Larsen makes a range of antennas in a
variety of mounts, including magnetic, that cover 28-30 MHz and claim to
be good for 200 watts, which ought to handle most current mobiles.

They are certainly rugged, and last well.

Robert Smits   There is *no* idiotproof filter.
VE7EMD   Idiots are proof against anything!
Ladysmith B.C.   - Richard Chycoski, VE7CVS
e-mail: emd@ham.almanac.bc.ca

Date: 29 Mar 94 04:56:22 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!gatech!news-feed-2.peachnet.edu!
emory!nntp.msstate.edu!olivea!sgigate.sgi.com!sgiblab!cs.uoregon.edu!
reuter.cse.ogi.edu!netnews.@ihnp4.ucsd.edu
Subject: CB Mag mount for 10M mobile?
To: ham-ant@ucsd.edu

In article <2n77mn$npv@hpchase.rose.hp.com>,
Chris Moore <cmoore@mothra.rose.hp.com> wrote:
>I have been thinking about trying out HF mobile operation, and I've
been
>looking for a good way to get started. I have an IC-737, which ought
to
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>like 20W max or something. So I guess my questions are, has anyone
>successfully used one of these for 10M, and also why the power
limitation?
>What component(s) in an antenna would restrict the power?
>
>Chris Moore
>N6IYS
>cmoore@cancun.rose.hp.com

I haven't seen that particular antenna, but the component most likely to restrict the power handling capability of a mobile antenna is the insulation of the loading coil. At the 100 watt level several thousand volts can be generated across the coil. This can cause arcing and also can cause heating if the coil is wound on a lossy form.

I assume the reason you are asking about mag-mounts is that you don't want to drill holes...right? Tsk, tsk. Get out that drill and do it! Survey after survey has shown that antenna holes do not affect a car's resale value. Personally, I think that if you're going to go mobile, you ought to do it right, and a mag-mount for hf ain't it. Get a Radio Shack 102" stainless steel whip and a ball mount. It will handle full amateur power with essentially zero loss and maximum possible bandwidth.

And as long as I'm on the soapbox, don't stop with ten meters. Try 40 and 20 - they're both excellent mobile bands, especially 40 because it's open 24 hours a day to somewhere. IMHO, either one is far superior to 10 for general all-round mobiling.

flame supressor now on...

73 es gl

Bill, W7LZP

Date: Tue, 29 Mar 1994 16:43:15 GMT
From: ihnp4.ucsd.edu!agate!library.ucla.edu!europa.eng.gtefsd.com!emory!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: CB Mag mount for 10M mobile?
To: ham-ant@ucsd.edu

In article <2n77mn$npv@hpchase.rose.hp.com> cmoore@mothra.rose.hp.com (Chris Moore) writes:
>What component(s) in an antenna would restrict the power?

Primarily the loading coil. For a short antenna, the currents in the coil can become huge with only modest amounts of power. They don't use heavy air core coils that could handle this because it would make the antenna larger, more expensive, and less attractive to the typical CB buyer. Look at a Texas Bugcatcher if you want to see the kind of coil you really need.

The best way to operate 10 meters with a converted CB antenna is to start with a bumper mount 102 inch whip and shorten it about 10 inches. No coil, so losses will be only those associated with the poor groundplane

provided by a vehicle. An alternative, not as good, would be something like a K40 antenna mounted in a drilled hole. These have heavier coils. Magmounts aren't great at CB or 10 meter frequencies. They couple ground currents capacitively, and capacitive reactance is greater at lower frequencies. So they work fine at UHF, but by the time you're down to HF they aren't very good. This is another of those cases where *drilling the hole* is the way to go, or at least mechanical bumper mounting.

Icom has a mobile ATU that works with your rig and an 8 foot whip to cover all HF bands. It works great on 20 thru 10, but the short whip does begin to limit results on 30, 40, 80, and 160. That's where a Bugcatcher shines.

Gary
--

Gary Coffman KE4ZV	You make it,	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	we break it.	uunet!rsiatl!ke4zv!gary
534 Shannon Way	Guaranteed!	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244		

Date: 29 Mar 94 16:09:42 GMT
From: sdd.hp.com!hpscit.sc.hp.com!cupnews0.cup.hp.com!jholly@hplabs.hp.com
Subject: Cushcraft A4 model
To: ham-ant@ucsd.edu

Anyone make a successful Elnec/YO model for the cushcraft A4?
Care to share your file?

Jim Hollneback, WA6SDM
jholly@cup.hp.com

Date: 30 Mar 94 03:25:05 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!noc.near.net!news.delphi.com!usenet@ucbvax.berkeley.edu
Subject: Need advice for HF antenna
To: ham-ant@ucsd.edu

Will Perry <wperry@cwis.unomaha.edu> writes:

>There are a lot of hams out there who swear by the G5RV, me included. Hope
>whatever antenna design you decide on gets you on the air soon. Good luck.
>
>Will Perry KB0IAR
>wperry@cwis.unomaha.edu

There are a number of us that swear AT the G5RV. On any band except 20M, a G5RV is losing more than a neglible amount of power in the coax. Throw away the coax and use ladder-line all the way to the balanced antenna tuner. Bill Orr, W6SAI, measured an SWR of 6/1 on 15m with a G5RV (CQ Nov '92). That's more than 4db loss per 100 ft of RG-58 i.e. more than half your power lost in the coax.

73, Cecil, kg7bk@indirect.com

Date: Tue, 29 Mar 1994 18:17:09 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!europa.eng.gtefsd.com!news.umbc.edu!cs.umd.edu!ra!usenet@network.ucsd.edu
Subject: Need help resonating 2m dipole
To: ham-ant@ucsd.edu

I recently constructed a 2 meter delta-matched 1/2 wave dipole for my attic whose basic design follows the one given in William Orr's `Radio Handbook.' The delta is terminated into a 4-to-1 coaxial balun which, as claimed in the book, transforms the 200 ohm impedance of the antenna to the 50 ohm intrinsic impedance of the coax. The delta match itself has the recommended dimensions listed in the book.

Problem: the antenna doesn't resonate. The SWR appears to be very high. The dipole is a 38.25 inch copper pipe (5/8 inch diameter), which might be a little long, so I've tried to adjust the impedance by moving the feed points of the delta-match on the antenna. (Symmetrically about the center, of course.) The next step is to either shorten the antenna, or change the dimensions of the delta-match.

One other point: I cut the 1/2 wavelength section of the balun a little too short. However, a theoretic analysis of the balun (I'm an electrical engineer) showes that the effective turns ratio of the balun is not very sensitive to its length. Thus, I'm fairly sure the mismatch is not due to the balun.

Soooooo... what do I do next? Cut the antenna? Change the dimensions of the delta-match? Recut the balun? I need the benfit of someone else's experience. I don't want to make any costly mistakes.

-Dave
--
David Drumheller, KA3QBQ phone: (202) 767-3524
Acoustics Division, Code 7140 fax: (202) 404-7732
Naval Research Laboratory
Washington, DC 20375-5350 e-mail: drumhell@claudette.nrl.navy.mil

---

Date: 30 Mar 94 03:12:53 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!noc.near.net!news.delphi.com!
usenet@ucbvax.berkeley.edu
Subject: Question about mobile antenna 40/80m
To: ham-ant@ucsd.edu

Jack GF Hill <root@jackatak.raider.net> writes:

>> Also, shouldn't your antenna have capacitive reactance on 10m?
>I would guess it does... though I have no mechanism to accurately
>measure it.

Sorry, I should have said that your antenna has inductive reactance
since it is close to 1/2 wavelength and therefore your coil is hurting,
not helping, your antenna on 10M... unless of course, the coil lengthens
the antenna past the inductive point... does that really work?

73, Cecil, kg7bk@indirect.com

Date: Mon, 28 Mar 1994 17:36:01 GMT
From: elroy.jpl.nasa.gov!ncar!gatech!wa4mei!ke4zv!gary@ames.arpa
Subject: TVRO Satellite Dishes on Ham Towers
To: ham-ant@ucsd.edu

In article <hamilton.764783394@BIX.com> hamilton@BIX.com (hamilton on BIX) writes:
>
>At the risk of asking a question that's just impossibly stupid, I'll
>do it anyway...
>
>Are amateur radio towers strong and rigid enough to allow a 10 or 12-foot
>satellite dish to be mounted on them? I'm beginning to give some thought
>to a tower in the 100-foot range but wondering if I might kill two birds
>with one stone, the second being that I'd also like to put up a satellite
>dish but it'd have to be up about 50 or 60 feet to see over the tall
>pines in our area.

Dresser-Ideco used to make one, but it's 9 feet on a face. We've got two
8 foot microwave dishes on ours, one at 300 feet and the other at 980 feet.
You can actually see the 7 inch angle iron cross braces flex in a good wind.

>My sense is that this is asking for a lot in a tower, since the wind load
>of a large disk is enormous and because you can't afford much twisting in
>the wind or you lose the satellite signal.

Your sense is good. The windloading is *enormous*, and the torque that loading puts on the moment arm of a tower is *incredible*. Our 6 meter dish, mounted on a 12 foot steel pole about 2 feet in diameter, has a rated overturning moment of 250,000 ft-lb in a 70 MPH wind. We had to install a grid of 12 inch I beams in the roof to support it.

If that isn't enough, remember that you typically need a pointing accuracy of 0.5 degree for a satellite dish. The mounts have to be really rigid to allow that sort of accuracy.

OTOH, I have seen an eight foot home satellite dish mounted on a 20 foot section of 8 inch well casing filled with cement. It has survived so far, and been stable enough to keep the satellite in it's wider beamwidth.

Remember too that most of the satellites will be 22 degrees or more above the horizon, so you only need a clearance of about 150 feet from a 60 foot pine in order to see over it from ground level. If the trees are closer than that, then that's why Homelite makes chainsaws. :-)

Gary
--

Gary Coffman KE4ZV	You make it,	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	we break it.	uunet!rsiatl!ke4zv!gary
534 Shannon Way	Guaranteed!	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244		

Date: 29 Mar 1994 03:59:06 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!overload.lbl.gov!agate!library.ucla.edu!europa.eng.gtefsd.com!news.umbc.edu!eff!neoucom.edu!news.ysu.edu!yfn.ysu.edu!au156@network.ucsd.edu
Subject: TVRO Satellite Dishes on Ham Towers
To: ham-ant@ucsd.edu

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>with one stone, the second being that I'd also like to put up a satellite
>dish but it'd have to be up about 50 or 60 feet to see over the tall
>pines in our area.

Suggest that for more responses to your question in addition to those received here, you post to rec.video.satellite and/or email to Gary Bourgois, WB8EOH, at flash@lopez.marquette.mi.us.

Gary is one of the resident sat-tv gurus on that newsgroup, and as
you can see, is also a ham. I'm pretty sure he has mentioned
that he has at least one dish (he must have several in all) on a
tower.

I'm also sure he'd have some advice for you about tall-tower
mounting. I don't think Gary's is anything as tall as the one
you are contemplating, though.

Hank
N1LTV

Date: Mon, 28 Mar 1994 17:12:15 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!csulb.edu!nic-nac.CSU.net!usc!sdd.hp.com!
portal.com!portal!combdyn!lawrence@network.ucsd.edu
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>pines in our area.
>
>My sense is that this is asking for a lot in a tower, since the wind load
>of a large disk is enormous and because you can't afford much twisting in
>the wind or you lose the satellite signal.
>
I don't know the details.....I didn't get to stop in look...but driving
through the country side....to and from a ham meet....noticed country
homes with what looked like a tower with a dish mounted at the top. It
wasn't a normal dish.....more like a bunch of horizontal bars arranged
to form a dish. I guess the use of bars is to reduce the wind load...which
was pretty fierce.....had enough trouble keeping the van on the road that day.

--
 WORK: lawrence@combdyn.com | PHONE 403 529 2162 | FAX 529 2516 | VE6LKC
 HOME: dreamer@lhaven.uumh.ab.ca | 403 526 6019 | 529 5102 | VE6PAQ

 Praxis BBS - 529 1610 | CYSNET BBS - 526 4304 | Lunatic Haven BBS - 526 6957
 ----
 disclamer = (working_for && !representing) + (Combustion Dynamics Ltd.);

Date: Mon, 28 Mar 1994 22:59:56 GMT
From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!darwin.sura.net!
fconvx.ncifcrf.gov!mack@ames.arpa
Subject: What length for 2m radials
To: ham-ant@ucsd.edu

In article <2n77mk$1sv@agate.berkeley.edu> ron@etch-eshop.Berkeley.EDU (Ronald
Viegelahn) writes:
>
>
> If I were to build a 5/8 wave vertical for 2m.
>
> How long should the 4 radials be ?
>
Same as for a 1/4 wave ground plane ie 19.25 inches.

Joe Mack NA3T
mack@ncifcrf.gov

End of Ham-Ant Digest V94 #84
****
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